**Unit 9:**

**Objectives: After successful completion of this unit the student will be able to:**

1. **Describe the various relationships among the variables that describe gases (e.g., pressure, temperature, volume, and moles.)**
2. **Define the Universal Gas Constant.**
3. **Predict the physical state and properties of a substance at a given temperature by consideration of pressure, volume, and temperature.**
4. **Understand the concept of an Ideal Gas.**
5. **Differentiate between a gas and a vapor.**
6. **Use “The Gas Laws” to predict the pressure, volume, temperature and amount of a gas at specific conditions.**
7. **Explain how the observed properties of gases (e.g., expansion, pressure, low density, and diffusion) relate to the physical and chemical properties of a gas.**
8. Intro
9. Remember:
   * 1. 3 states of matter
     2. Differences in energy and atom/molecule proximity
10. Basic Terms

1. Pressure

1. volume
2. Mole
3. Universal gas constant
4. Temperature
5. STP
6. Ideal gas
7. Observed Properties of Gases
8. Expansion
9. Pressure
10. Low Density
11. Diffusion
12. Kinetic Theory (Description of a Gas)
13. Defined
14. Specific assumptions
15. Attractive forces (Effect)
16. Ideal Gas Law
17. Definition
18. Examples